

**REMARKS**

Claims 1-30 were pending in this application.

Claims 1-30 have been rejected.

Claims 1, 12, 20, 21, 23-27, and 29 have been amended as shown above.

Claim 31 has been added.

Claims 1-31 are now pending in this application.

Reconsideration and full allowance of Claims 1-31 are respectfully requested.

**I. REJECTION UNDER 35 U.S.C. § 112**

The Office Action rejects Claims 12-19 and 29 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter regarded as the invention. In particular, the Office Action asserts that Claim 12 is unclear because Claim 12 (previously) recited “at least one input operable to receive a first signal and a second signal.” According to the Office Action, an “input port or input bus may receive an input,” but it is “unclear how an input itself receives another input (first and second signal).”

The standard for definiteness is whether a claim reasonably apprises those of skill in the art of its scope. (*MPEP* § 2173; *In re Warmerdam*, 33 F.3d 1354, 1361, 31 U.S.P.Q.2d 1754, 1759 (Fed. Cir. 1994)). Whether the claim leaves unclear the manner in which a recited feature may be implemented is irrelevant where the claim clearly covers all forms of implementation. (*MPEP* § 2173.02; *In re Warmerdam*, 33 F.3d 1354, 1361, 31 U.S.P.Q.2d 1754, 1759 (Fed. Cir. 1994)). Determining whether a claim is indefinite requires an analysis of whether one skilled in

the art would understand the bounds of the claim when read in light of the specification. (*MPEP* § 2173.02; *Credle v. Bond*, 25 F.3d 1566, 1576, 30 U.S.P.Q.2d 1911, 1919 (Fed. Cir. 1994)). The claim is not indefinite if one skilled in the art would have no particular difficulty in determining whether the recited feature has been implemented. (*MPEP* § 2173.02; *In re Warmerdam*, 33 F.3d 1354, 1361, 31 U.S.P.Q.2d 1754, 1759 (Fed. Cir. 1994)).

The “input” recited in Claim 12 is a physical input, not a signal. Moreover, Claim 12 does not require (but also does not prevent) the simultaneous receipt of both the first signal and the second signal at the first input. As a result, someone of ordinary skill in the art can easily understand the scope of Claim 12 (and its dependent claims).

Accordingly, the Applicant respectfully requests withdrawal of the § 112 rejection.

## **II. REJECTION UNDER 35 U.S.C. § 101**

The Office Action rejects Claims 1-30 under 35 U.S.C. § 101 as being directed to non-statutory subject matter.

Claims 1, 12, and 20 recite generating and storing a “model associated with the one or more model parameters.”

None of these claims can possibly represent a “mathematical algorithm ... with no claimed practical application.” The generation and storage of a model is clearly a practical application. The model is clearly useful (there is no outstanding § 101 rejection of the claims as lacking utility), so Claims 1-30 produce a “useful” result. There is no assertion that the claims produce inconsistent or un-repeatable results, so Claims 1-30 produce a “concrete” result. The

claims recite the generation and storage of a model, which clearly represents a “tangible” result. Because of this, Claims 1-30 satisfy the requirement that the claims produce a “useful, concrete and tangible result.”

Moreover, while MPEP § 2106 and the relevant case law require that a claim specify a “practical application,” the specific requirement is that the claims “must set forth a practical application ... to produce a real-world result.” (*MPEP § 2106*)(underlining added). This does not require that a practical application be specified for the real-world result in the claims. The only requirement is that a practical application be provided in the claims to produce a real-world result. While Claims 1-30 may not specify how the generated “model” is used after storage, this is irrelevant since the model is a real-world result. The Applicant is not required to further specify a practical application for the model (the real-world result).

In addition, MPEP § 2106.02 is limited to cases where claims “consist[] solely of mathematical operations without some claimed practical application.” (underlining added). As noted above, the generation and storage of a model is clearly a practical application, and the claims do not consist solely of “mathematical operations without some claimed practical application.”

Accordingly, the Applicant respectfully requests withdrawal of the § 101 rejection.

### **III. REJECTION UNDER 35 U.S.C. § 102**

The Office Action rejects Claims 20-27 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,615,164 to Gopisetty et al. (“*Gopisetty*”). This rejection is respectfully

traversed.

A prior art reference anticipates a claimed invention under 35 U.S.C. § 102 only if every element of the claimed invention is identically shown in that single reference, arranged as they are in the claims. (*MPEP* § 2131; *In re Bond*, 910 F.2d 831, 832, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir. 1990)). Anticipation is only shown where each and every limitation of the claimed invention is found in a single prior art reference. (*MPEP* § 2131; *In re Donohue*, 766 F.2d 531, 534, 226 U.S.P.Q. 619, 621 (Fed. Cir. 1985)).

Once again, the Office Action ignores the language of Claim 20 is making the § 102 rejection. Claim 20 contained no “intended use” language and instead recited “computer readable program code” for performing certain functions. However, to resolve this issue, the Applicant has amended Claim 20 as shown above. With these amendments, Claim 20 is clearly patentable over *Gopisetty* (since the Office Action never actually shows that *Gopisetty* discloses the majority of the elements in Claim 20).

For these reasons, *Gopisetty* fails to anticipate the Applicant’s invention as recited in Claim 20 (and its dependent claims).

Accordingly, the Applicant respectfully requests withdrawal of the § 102 rejection and full allowance of Claims 20-27.

#### IV. REJECTION UNDER 35 U.S.C. § 103

The Office Action rejects 1-6, 9, 10, 12-16, 18, 20-23, 25, 26, and 28-30 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Publication No. 2004/0057585 to Madievski et

al. (“*Madievski*”) in view of U.S. Patent Publication No. 2005/0015205 to Repucci et al. (“*Repucci*”). This rejection is respectfully traversed.

In *ex parte* examination of patent applications, the Patent Office bears the burden of establishing a *prima facie* case of obviousness. (MPEP § 2142; *In re Fritch*, 972 F.2d 1260, 1262, 23 U.S.P.Q.2d 1780, 1783 (Fed. Cir. 1992)). The initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention is always upon the Patent Office. (MPEP § 2142; *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Piasecki*, 745 F.2d 1468, 1472, 223 U.S.P.Q. 785, 788 (Fed. Cir. 1984)). Only when a *prima facie* case of obviousness is established does the burden shift to the Applicant to produce evidence of nonobviousness. (MPEP § 2142; *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Rijckaert*, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993)). If the Patent Office does not produce a *prima facie* case of unpatentability, then without more the Applicant is entitled to grant of a patent. (*In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Grabiak*, 769 F.2d 729, 733, 226 U.S.P.Q. 870, 873 (Fed. Cir. 1985)).

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim

limitations. The teaching or suggestion to make the claimed invention and the reasonable expectation of success cannot be based on the Applicant's disclosure. (*MPEP* § 2142).

Claims 1, 12, and 20 have been amended to recite that two diagonals "divide [an] upper triangular matrix into four sections." Claims 1, 12, and 20 have also been amended to recite that one or more model parameters are identified using "one or more defined areas in the upper triangular matrix," where the one or more defined areas are located in a "single one of the sections of the upper triangular matrix."

*Repucci* does disclose the use of an upper triangular matrix, which has the form shown in Equation (5) of *Repucci*. (*Par.* [0073]). However, nothing in *Repucci* indicates that two diagonals divide the upper triangular matrix into four sections, where defined areas in a single one of those four sections are used to identify model parameters. Equation (5) of *Repucci* simply defines the structure of an upper triangular matrix, and nothing in the associated description (*par.* [0073]) describes these elements of Claims 1, 12, and 20.

The Office Action also cites paragraphs [0084]-[0089] of *Repucci*. However, this portion of *Repucci* merely describes the use of an "upper-triangular canonical form," which is the form shown in Equation (5). As a result, this portion of *Repucci* similarly fails to disclose that two diagonals divide an upper triangular matrix into four sections, where defined areas in a single one of those four sections are used to identify model parameters.

For these reasons, the proposed *Madievski-Repucci* combination fails to disclose, teach, or suggest the Applicant's invention as recited in Claims 1, 12, and 20 (and their dependent claims).

Accordingly, the Applicant respectfully requests withdrawal of the § 103 rejection and full allowance of Claims 1-6, 9, 10, 12-16, 18, 20-23, 25, 26, and 28-30.

V. **NEW CLAIM**

The Applicant has added new Claim 31. The Applicant respectfully submits that no new matter has been added. At a minimum, the Applicant respectfully submits that Claim 31 is patentable for one or more reasons discussed above. The Applicant respectfully requests entry and full allowance of Claim 31.

SUMMARY

The Applicant respectfully asserts that all pending claims in this application are in condition for allowance and respectfully requests full allowance of the claims.

If any issues arise or if the Examiner has any suggestions for expediting allowance of this application, the Applicant respectfully invites the Examiner to contact the undersigned at the telephone number indicated below or at *wmunck@munckbutrus.com*.

The Applicant has included the appropriate fee to cover the cost of one (1) additional claim. The Commissioner is hereby authorized to charge any additional fees connected with this communication (including any extension of time fees) or credit any overpayment to Deposit Account No. 50-0208.

Respectfully submitted,

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